KOMISSAROV, P.M.; VARLAMOV, G.P.

The IBK-5 device for chopping vine crops and separating their seeds. Biul.tekh.-ekon.inform. no.10:68-70 '61. (MIRA 14:10)
(Vine crops)

VARLAMOV, G.P.; KIMISSAROV, P.M.

Study of methods for harvesting plums. Trakt.i sel'khozmash. no.8:30-32 Ag '62. (MIRA 15:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(Plum) (Agricultural machinery)

VARLAMOV, G.P.

Determining the operating conditions of a vibration machine for fruit harvesting. Trakt. i sel'khozmash. 33 no.9:33-35 S '63. (MIRA 16:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(Fruit--Harvesting)

TARLAMOV, G.P.

All-Union Conference on Methods and Research in the [illegible]
Fertilizers. Trakt. i sel'khozmash. no.6:48, 3 of cover Je '64
(MIRA 18:)

VARLAMOV, G.P., kand. tekhn. nauk

Results of the testing of machines for the placement of organic fertilizers. Trakt. i sel'khozmash. no.7:26-28 Jl '65. (MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya, Moskva.

FROLOV, N.I.; VARLAMOV, G.T.; PISHEK, Ya.

Practice of using a ZIF-65GA rig to drill deep holes. Razved. i okh. nedr 29 no.7:56-58 Jl '63. (MIRA 16:9)

1. Gosudarstvennyy geologicheskiy komitet SSSR (for Frolov, Varlamov).
2. Cheskoye narodnoye predpriyatiye "Geologicheskaya razvedka" (for Pishek).

(Boring machinery)

IL'IN, S., slesar' mekhanicheskogo tsekha, ratsionalizator; SOLENKOV, A. elektromonter, ratsionalizator; VARLAMOV, I., tekhnik-konstruktor. ratsionalizator.

Proper conditions for the work of efficiency promoters have not been created. Stroi.mat. 3 no.2:28 F '57. (MLRA 10:3)

1. Shchurovskiy tsementnyy zavod.
(Shchurovo--Cement industries)

VARLAMOV, I.

Thematic assembly in Tiflis. Pozh.delo 7 no.5:30 My '61.
(MIRA 14:5)

(Tiflis--Fires and fire prevention)

VARLAMOV, I. P. Cand Geol-Min Sci -- (diss) "History of the Geologic Development of Central Yakutiya from the Upper Cretaceous to the Modern Era." Saratov, 1957. 16 pp 20 cm. (Min of Higher Education USSR, Saratov State Univ im N. G. Chernyshevskiy), (KL, 26-57, 106)

VARLAMOV, I.P.

VARLAMOV, I.P.

History of the geological development of central Yakutia during the upper Cretaceous and Cenozoic periods. Izv.vost.fil. AN SSSR no.3:36-51 '57. (MIRA 10:9)

1. Bashkirskiy filial Akademii nauk SSSR.
(Yakutia--Geology, Structural)

VARLAMOV, I. P.

PA - 3172

AUTHOR: ROZHDESTVENSKIY, A.P., VARLAMOV, I.P.

TITLE: Traces of Ancient Glaciation in West Bashkiria. (O sledakh drevnego oledeneniya v zapadnoy Bashkirii, Russian)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 3, pp 661-663 (U.S.S.R.)

ABSTRACT: In the plane parts of Western Bashkiria no signs of ancient glaciation have hitherto been found. In the summer of 1955 the authors investigated the region in the neighborhood of the Asli-Kul Lake, which is situated in Western Bashkiria between the rivers Chermasan and Asli-Udryak at the foot of the NE slope of the Belebeyev range at the same latitude of the Zigal'ga mountains.

It is assumed that the Asli-Kul moraine belongs to the middle Pleistocene.

As a result of investigations carried out the following may be said:

1.) The NW part of the Belebeyev range was subjected to glaciation. This is also where the material for the Asli-Kul moraine came from.
2.) This glaciation was of local character.
3.) At the time when glaciation attained its maximum the snow border within Bashkiria extended along the latitudes of the Zigal'ga mountains and the Asli-Kul Lake, i.e. much lower

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Traces of Ancient Glaciation in West Bashkiria.

than had been assumed by KOLOKOLOV and L'vov. (Uzv.VGO. 1945, Nr 1 - 2 ). (1 Illustration and 1 Slavic Reference).

ASSOCIATION: Institute for Mountain Geology of the Bashkirian Branch of the Academy of Science of the U.S.S.R.
PRESENTED BY: N.M.STRAKHOV, Member of the Academy, on 25.10.1956
SUBMITTED: 16.6.1956
AVAILABLE: Library of Congress

Card 2/2

VYSHEMIRSKIY, V.S.; VARLAMOV, I.P.

Development of the relief of the western Verkhoyansk Range and the adjacent parts of the Siberian Platform. Geog.sbor. no.10:142-150 '58. (MIRA 12:1)
(Verkhoyansk Range--Geology, Structural)
(Siberian Platform--Geology, Structural)

VARLAMOV, I.P.

Erosion surfaces and recent tectonics of the southern Bashkiria portion of the cis-Ural region and the adjacent area of the Southern Urals. Vop. geomorf. i geol. Bashk. no. 2:32-46 '59. (MIRA 14:4)

(Ural mountain region--Geology, Structural)

3(0)
AUTHOR: Varlamov, I. P.

SOV/20-124-3-44/67

TITLE: The Kinel' Deposits in the Nugush River Valley (Right Tributary of the Belaya River) (Kinel'skiye otlozheniya v doline r. Nugusha (pravyy pritok r. Beloy))

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 3, pp 649-651 (USSR)

ABSTRACT: The sediments discussed in this paper occur in the unusually deep valley fill of the Nugush Valley where the river cuts across the first mountain range of the southern Ural (between the villages of Privol'noye and V. Tashevo). This complex of sediments was first discovered under the Apsheron Quaternary sediments by drilling in the years 1955-1957. The author selected the Kinel' sediments on the basis of their great similarity to the so-called Kinel' complex of rocks (Ref 2). The stratigraphy of these beds could be clarified after many borings in the Nugush Valley were made and the core samples were studied palinologically (by Moreva and Gaygerova, Vsesoyuznyy geologicheskiy institut, All Union Geologic Institute). In the area in question the Kinel' complex consists of 2 units which have a transitional contact. The lower (basal)

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unit is only 15 m thick. Its age (according to Geygerova) is Tertiary; the majority of pollen analyses show it to be Miocene Lower Pliocene. The upper unit is about twice as thick as the lower (up to 32 m) and the lithology is manifold. The lower unit is represented by two freshwater facies which grade into one another in the central part of the ancient valley in the direction of the left side. The first is a river-bed facies. This fills only the deepest part of the ancient Mugush river valley. The upper unit of the Kinel' sediment is outside of the ancient valley, apparently represented by a marine facies. This is indirectly shown by marls with interbeds of peat and brown coal. V. A. Moreva assumed the age of the lower part of the upper unit to be Lower Pliocene on the basis of a rather rich spore-pollen complex. Other complexes from the upper unit are less rich in species and should belong, according to Moreva, to the Upper Neogene. Finally, the spore-pollen complexes are compared with those of adjacent regions and stages (Refs 1-4) and thereby the aforementioned ages of the Kinel' beds are confirmed. There are 4 Soviet references.

The Kinel' Deposits in the Nugush River Valley (Right Tributary of the Belaya River)

SOV/20-124-3-44/67

ASSOCIATION: Gorno-geologicheskiy institut Bashkirskogo filiala Akademii nauk SSSR (Mining-Geological Institute of the Bashkir Branch of the Academy of Sciences, USSR)

PRESENTED: October 11, 1958, by N. M. Strakhov, Academician

SUBMITTED: May 19, 1958

Card 3/3

VARLAMOV, I.P.

Some data on outcropping of Neogene (Kinel' ?) formations and showings of the most recent tectonics in the Zilim Valley. Vop. geol. vost. okr. Rus. plaft. i IUzh. Urala no.4:123-127 '59. (MIRA 14:6)

(Zilim Valley--Geology)

3(5) SOV/2o-127-2-48/7o

AUTHOR: Varlamov, I. P.

TITLE: Some Data on the Age of the Denudation Surfaces of the Southern Part of the Western Slope of the Bashkirskiy Ural

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 2, pp 4o5 - 4o7 (USSR)

ABSTRACT: The problem mentioned in the title belongs to the most topical and much discussed problems. Most of the authors (Refs 1-4) assume the mentioned surfaces to belong to the interval between Upper Paleozoic or Mesozoic (topmost surface) up to Tertiary (lowest surface). No paleontological material may, however, be found in the publications confirming these data concerning age. In the section of the Ural mentioned in the title the author distinguishes quite distinctly between three denudation surfaces. Their distribution region is shown in figure 1: First (lowest) denudation surface with absolute elevations of mostly 42o-46o m (Nugushsko-Bel'skoye interfluvial region), 36o-42o m (right bank of the Sakmara

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Some Data on the Age of the Denudation Surfaces of the Southern Part of the Western Slope of the Bashkirskiy Ural

SOV/20-127-2-48/70

catchment area). It consists on the whole of Proterozoic and Paleozoic rocks (Bel'skoye catchment area), or of Upper Paleozoic, partly Silurian - Lower Devonian rocks respectively (Sakmaro-Ikskoye interfluvial region) and is 200-230 m higher than the river beds; the second denudation surface is most widely distributed and has a sea level of 480-500 m. It is mostly 100-120 m higher than the first denudation area. The rocks are the same as those of the first denudation surface. The third denudation surface has a sea level of 640-700 m. It is 140-160 m higher than the second surface. Argillaceous and sandy loose rocks were extracted by boring and mining. According to present data they fill mostly the negative original forms of the relief and are apparently of predominantly diluvial origin. N. N. Sigova determined pollens and spores from rocks which indicate an Upper Tertiary age. The insufficient material did not admit a further diviaion. It must be assumed that the age of each of the terraces upon which these loose sediments rest corresponds to the age of the latter. The difference between the percentage of pollens and spores in them is quite distinct on individual denudation surfaces with re-

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Some Data on the Age of the Denudation Surfaces of the Southern Part of the Western Slope of the Bashkirskiy Ural SOV/20-127-2-48/70

spect to individual plant groups. Thus the author assumes that the third denudation surface belongs to Lower Middle Miocene, the second to Lower Middle Pliocene, and the first to Akchagyl. The highest stage of the relief is assumed to belong to Upper Paleogenic under certain conditions. Thus there is no reason for speaking of Mesozoic or even of Paleozoic relief forms. There are 1 figure and 6 Soviet references.

ASSOCIATION: Gorno-geologicheskiy institut Bashkirskogo filiala Akademii nauk SSSR (Mining-geological Institute of the Bashkir Branch of the Academy of Sciences, USSR)

PRESENTED: February 27, 1959, by I. P. Gerasimov, Academician

SUBMITTED: February 25, 1959

Card 3/3

VARLAMOV, I. P.; OZHIGANOVA, L. D.

Recent data on the existence of continental Permian deposits of the eastern slope of the Southern Urals. Dokl. AN SSSR 147 no.4:893-895 D '62. (MIRA 16:1)

1. Gorno-geologicheskiy institut Bashkirskogo filiala AN SSSR. Predstavleno akademikom D. V. Nalivkinym.

(Ural Mountains--Geology, Stratigraphic)

VARIAMOV, I.P.; MUSINA, G.V.; OZHIGANOVA, L.D.

Stratigraphy of the Permian sediments of the Magnitogorsk synclinorium. Biul. MOIP. Otd. geol. 39 no.4:80-84 Jl-Ag '64. (MIRA 17:10)

VARLAMOV, I. S.

USSR/Medicine - Veterinary FD-1272

Card 1/1 : Pub. 137-9/17

Author : *Varlamov, I. S.

Title : Sulfanthrol in the treatment of pasteurellosis in cattle

Periodical : Veterinariya, 10, 48-49, Oct 1954

Abstract : Eleven head of cattle ranging in age between 8 months and 10 years were successfully treated with sulfanthrol against pasteurellosis. Three subcutaneous injections of 1.5g in 4% solution were given. The author of this article suggests that practical veterinarians further test the effects of this drug in the treatment of their cattle against pasteurellosis.

Institution : Predgornaya Rayon Hospital, Groznenskaya Oblast (*Chief)

Submitted :

NIKOLIN, A.V.; BELOV, A.P., kapitan-nastavnik; VARLAMOV, I.S., kapitan-nastavnik; KOSMACHEV, I.K., kapitan-nastavnik; SARATOV, V.F., kapitan-nastavnik; SHMONIN, M.I., kapitan-nastavnik; BEKMAN, A.A., kapitan; DRUZHININ, A.V., kapitan; IVANINA, B.F., kapitan; POLETAYEV, L.A., kapitan; VESHCHILOV, K.A.; VYKHODTSEV, P.K.; SMOLDYREV, A.Ye.; VERESHCHAGIN, Ya.A.; SUTYRIN, M.A.; SAVOSTIN, N.D.; FILYASOV, K.A.; GOLOVUSHKIN, M.P.; IVANOV, A.I.; FILYASOV, K.A., otv.za vypusk; ALEKSEYEV, V.I., red.izd-va; YERMAKOVA, T.T., tekhn.red.

[Rules of navigation on R.S.F.S.R. inland waterways] Pravila plavaniia po vnutrennim vodnym putiam RSFSR. Vvedeny v deistvie s 1 marta 1959 g. prikazom ministra rechnogo flota no.28 ot 11 fevralia 1959 g. Moskva, Izd-vo "Rechnoi transport," 1959. 124 p. (MIRA 13:6)

1. Russia (1917- R.S.F.S.R.) Ministerstvo rechnogo flota. 2. Glavnyy revizor po bezopasnosti sudokhodstva (for Nikolin). 3. Nachal'niki basseynovykh sudokhodnykh inspektsiy (for Veshchilov, Vykhodtsev, Smoldyrev). 4. Rabotniki Upravleniya glavnogo revizora po bezopasnosti sudokhodstva (for Vereshchagin, Sutyrin, Savostin, Filyasov). 5. Glavnoye upravleniye vodnykh putey i gidrotekhnicheskikh sooruzheniy (for Golovushkin).

(Inland navigation--Laws and regulations)

VARLAMOV, I.S.

Sulfantrol therapy for pasteurellosis in cattle. Veterinariia 31 no.10:48-49 O '54. (MLRA 7:10)

1. Zaveduyushchiy Predgornoy rayonnoy lechebnitsey Groznenskoy oblasti.
(Hemorrhagic septicemia of cattle)

AUTHOR: Varlamov, I.V., Engineer SOV/135-59-1-16/18

TITLE: A ~~Magnetic~~ Oscillograph (Magnitnyy ostsillograf)

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 1, pp 45-46 (USSR)

ABSTRACT: Information is given on various types of oscillographs, including a detailed description of a magnetic oscillograph suggested by the author. This device makes it possible to retard the run of the reproduced processes by 100 times, with the use of a standard ferromagnetic film and ordinary tape recorder heads. The use of a special recording head with reduced inductivity and a high-quality ferromagnetic film can decelerate the process of reproduction by over 100 times. The switching-on of a loop oscillograph makes it possible to obtain oscillograms for processes of $10^{-4}$ to $10^{-5}$ seconds duration.

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A Magnetic Oscillograph SOV/135-59-1-16/18

The described device is manufactured in two variants, i.e. a portable and a laboratory device. There are 2 diagrams.

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9(2,3), 18(5,7) SOV/135-59-8-9/24

AUTHOR: Varlamov, I.V., Engineer

TITLE: Use of Semi-Conductor Triodes in Automatic Welders for Shielded Arc Welding

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 8, pp 30-31 (USSR)

ABSTRACT: In recent years a strong increase in the use of semi-conductors, especially of semi-conductor triodes, can be noticed. The characteristics of the semi-conductor triode, the long life time, the low sensibility in regard to dynamical strain, its resistance to moisture, the low feeding voltage, and the high capacity, offer many possibilities for its use in welding engineering. In designing the electric equipment for sigma welding (shielded-arc welding) with unmeltable electrodes great attention is given to the conveyer mechanisms of the wire and the moving of the burner. These mechanisms must guarantee a constant welding speed and the supply of the auxiliar wire in the welding processes. The section modulus on the shaft of the motor may be changed during the welding if it is causing an alteration

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Use of Semi-Conductor Triodes in Automatic Welders for Shielded Arc Welding

of the rotation speed of the motor. The stiffer the statical characteristic is the less will a change in the section modulus influence the rotation speed. The engineers are often confronted with the problem of constructing a distant control system using the rotation speed of the motor and guaranteeing the independence of the rotation speed of the voltage fluctuations in the system. At the present time D.C. motors with separate excitation are usually taken, whose feeding is done according to the scheme given in figure 1. In this scheme the motor speed is changed by alterations in the voltage which is applied to the armature of the motor. This regulation method guarantees wide limits in changing the motor speed, but the stiffness of the statical characteristic is often unsatisfactory. To remove the influence of the voltage fluctuation on the motor speed it became necessary to use a ferro-resonance-damper of the voltage. This, however, considerably increases the weight and dimensions of the control apparatus. In this case a distant control is

Use of Semi-Conductor Triodes in Automatic Welders for Shielded Arc Welding

completely impossible. Good results are obtained if motors are used in which magamps regulate the rotation speed. With this method it is rather easy to realize a distant control and a stabilization of the speed during voltage changes in the feeding system, because it is only necessary to stabilize the gaged voltage. This scheme, however, does not always guarantee the required stiffness of statical characteristic. The attempt to improve the sensibility of the system leads to a complication of the magamp and to an increase of the capacity of the potentiometer P, which in turn enlarges the weight and dimensions of the control apparatus. Good results are obtained, if the saturation chokes with semi-conductor triodes are used as magamps. Figure 3 shows the scheme of regulating the speed of a D.C. motor with separate winding of the excitation by using a saturation choke and a semi-conductor triode. As before the speed is set with the potentiometer P, and it is stabilized during changes of the section modulus on the motor shaft by

Use of Semi-Conductor Triodes in Automatic Welders for Shielded Arc Welding

comparing the armature voltage with the gages. In the scheme the triode PP1 is switched with the emission device. The winding of the control of the saturation choke is switched into the circuit of the triode collector. To limit the maximum current in the base the resistance $R_a$ was switched into its circuit. Resistance R and slide V4 protect the triode in case that the polarity of the emission device and the base should change. The voltage U1 is selected by making it dependent on the winding resistance of the control of the saturation choke, the maximum current of this winding, the permissible dispersion capacity of this triode type, and the permissible voltage between the collector and the emission device. The parameter of this scheme can easily be calculated with the statical characteristics of the triode. If the parameters are properly selected, the output of the triode may exceed that of the dispersion of the collector by 7 or 8 times. Special attention should be directed to the right temperature values of the triode. If the coef-

Use of Semi-Conductor Triodes in Automatic Welders for Shielded Arc Welding

ficient of intensification of this scheme should not be sufficient, i.e. if the statical characteristic is not stiff enough, the two-step intensifier may be used on the triode (Figure 4). The regulation limits of the schemes which are given above depend on the actual working conditions and on the electro motor. To compare the relative effectiveness of these schemes they were tested on the welding head of the automatic pipe welder ATV. It is remarkable that the schemes with magamp led to good results only with electro-motors of high armature resistance. In d.c. motors of high armature resistance schemes must be used which compensate the voltage drop on the armature of the motor. There are 5 diagrams.

VARLAMOV, I.V., insh.

Magnetic oscillograph. Svar.proizv. no.1:45-46 Ja '59.
(MIRA 12:1)
(Electric welding--Equipment and supplies) (Oscillography)

SOV/125-59-8-9/18

25(7)
AUTHOR: Varlamov, I.V. (Moscow)

TITLE: New Forms of Equipment for Argon-Arc Welding with a Non-Fusing Electrode

PERIODICAL: Avtomaticheskaya svarka, 1959, Nr 8, pp 70-75 (USSR)

ABSTRACT: The article deals with the design of a power supply and control apparatus (including remote control) for manual and automatic argon-arc welding with a non-fusing electrode. Requirements of a power supply for argon-arc welding are discussed, chief among which are 1) steeply falling external characteristics, and 2) smooth extinguishing of the welding arc for finishing up circular seams on tubes (welding up of the "crater"). The author notes the advantages of welding rectifiers over rotary converters. One method of obtaining steeply falling external characteristics in welding rectifiers is the use of saturation chokes between the step-down transformer and rectifiers. This also simplifies remote control of the welding current. The VSS-120 and VSS-300 welding rectifier

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New Forms of Equipment for Argon-Arc Welding with a Non-Fusing Electrode

units, developed at VNIIESO, for currents of 120 and 300 Amp at a PR = 65% have steeply falling external characteristics and smooth regulation of the welding current from 15-140 and 25-300 A respectively. However, remote control of the welding current and smooth extinguishing of the arc are not provided for in these units. A power supply, the IP-100-1, developed to meet these requirements is described and illustrated (Figs 1, 3). The external characteristics are steeply falling (Fig 2); the divisibility of the short circuit current on AC (operating V = 17 V) is not more than 1.005. The power supply is rated for operation at a PR = 30%. Welding current can be regulated from 5-100 A, and regulation is by any one of 3 potentiometers, 1 in the supply itself, 1 on the control panel (for automatic welding), or 1 on the burner handle (for manual welding). By switching out the transformer windings and the saturation chokes the power supply can be used as an AC source. Smooth extinguishing of

New Forms of Equipment for Argon-Arc Welding with a Non-Fusing Electrode

the welding arc at the end of the welding cycle - outlined - is provided for. The rectifier circuit uses 3 type AVS-400-186 parallel connected selenium rectifier bridges. P4G germanium triodes are used for regulation of the welding current. The author outlines some particulars of the operation of this power supply unit. The circuit of the control apparatus for manual argon-arc welding is described and illustrated (Fig 4), and its operation is outlined. The burner for manual welding is also briefly described. The power supply described is used in conjunction with an automatic tube welder with remote control (Fig 5), whose circuit is intended for operation with NIAT construction type ATV welding heads. This circuit provides remote control of welding speed and feed rate from a portable control panel; it may be used with the IP-100-1 power supply or a converter. Some particulars of the operation of this circuit, which incorporates a type TP2-1 switching unit, are described.

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New Forms of Equipment for Argon-Arc Welding with a Non-Fusing Electrode

When operating with a welding converter another small unit, consisting of a magnetic release and an AP-25 automatic device, is connected. Type 20ChK knobs (small) are used on the control panel. There are 1 photograph, 3 schematic diagrams, 2 graphs and 1 Soviet reference.

SUBMITTED: April 9, 1959

Card 4/4

84609

S/135/60/000/004/006/008
A115/A029

1.2300 only 2208, 2708

AUTHORS: Popenko, V.S., Varlamov, I.V., Engineers

TITLE: Argon-Arc Welding Equipment for Annular Seams of Stainless Steel Parts

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 4, pp. 29 - 31

TEXT: The article was worked out in collaboration with V.I. Grinenko and V.I. Mironov. Owing to a difference in heat transmission between thin and thick walled items even the slightest deviation from conditions set for welding these objects leads to burns or undertemperatures during the welding process. Therefore, a new apparatus was designed for argon-shield welding of hermetic ring-shaped stainless steel seams with infusible electrode (Fig. 2). Characteristics of objects to be welded: diameter for a length of up to 3 m 8 -40 mm, length up to 0.5 m 8 - 120 mm.; thickness of welded items: 0.2 - 0.8 mm. Rotation furnished by a MY -320 (MU-320) motor direct current, 100 w, 6,200 rpm. Limits of smooth regulation of rotation of items in rpm: 0.6 - 16.6. Diameter of tungsten electrode 1 - 3 mm. Source of arc tension : 3-phase BCC-100 (VSS-100) selenium rectifier. Smoothness of regulation of welding current 5 - 80 amp. Expenditure of

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84609

S/135/60/000/004/006/008
A115/A029

Argon-Arc Welding Equipment for Annular Seams of Stainless Steel Parts

argon in l/min: 2 - 10. Production cycle: automatic with adjustable time for smooth extinguishing of arc after overhead cover of seam. Size of the apparatus (Fig. 2): 1,200 mm long, 610 mm wide, 1,350 mm high. Weight 300 kg. A detailed description of the operation of the apparatus is given. The welding is done by a tungsten electrode and direct current. The welding circuit is fed by a current source consisting of a 3-phase transformer and 3-phase BC6, BC7, BC8 (VS6, VS7, VS8) selenium bridge rated at a maximum of 100 amp. Inside the electric scheme, there is provision for welding with additional wire, but the installation described here has been designed without it. External aspect of a weldment is shown in Fig. 4. There are 4 figures.

Card 2/2

22012
S/135/61/000/006/001/008
A006/A106

1.2300 also 1573

AUTHORS: Varlamov, I. V., and Ishchenko, Yu. S., Engineers

TITLE: Programing the conditions of argon-arc welding of pipes with non-consumable electrodes

PERIODICAL: Svarochnoye proizvodstvo, no. 6, 1961, 5-6

TEXT: In automatic argon-arc welding of stationary pipe butts of 8-26 mm diameter and over 0.75 mm thick walls fusion over the whole perimeter of the joint is non-uniform. Uniform fusion can only be achieved by changing the welding conditions according to a given program. An investigation was made to reveal the necessity of programing the conditions in argon-arc butt welding of 8 - 26 mm diameter stainless steel pipes with 0.5 - 2.0 mm thick walls. A method was developed for calculating programing welding conditions. The welding heat cycle was calculated by taking into account the heat transfer in front and at the rear of the heat source. A formula is given to calculate the heat necessary for fusion:

$$0.24 \cdot UI\eta_e\eta_t = v_{weld} F_{pr} C'_p \gamma \left\{ T_{fus} - [T(r,x)\psi_2(\tau,\rho) + \sum_{i=1}^{n} T_i(r_i,t_i)] \right\} \quad (5)$$

where U is the arc voltage; I - arc current; $\eta_e$ the effective arc eff.

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Programing the conditions ... efficiency; $\eta_{th\ eff.}$ the thermal efficiency of the process; $v_{weld}$ - the welding speed; $F_{pr}$ - the section of weld; $\gamma$ - the metal density; $T_o$ - the initial metal temperature; $T_{fus}$ - the metal fusion temperature; $C_p$ - the heat capacity; r and x - coordinates of the point in respect to the movable linear concentrated source; $t_i$ - the time from the beginning of operation of the source; $r_i$ - the distance from the given point to the i-source. The effect of preheating is taken into account to correct the welding conditions in respect to current and speed. In programing of current the speed remains constant, while the current is constant in programing of speed. Program curves are plotted (Fig. 1) according to current and speed, calculated by a number of points in a given order. The program curves are divided into 3 sections: section I, the initial section of the curve is predetermined by the heat saturation period, and the heat emanates only in front of the source; section II - the middle section where the heat emanates in front and at the rear of the source; section III - the end of curve, where heat the necessity of programing at the front and rear end of the weld, by comparing the time of fusion with the heat saturation time and taking into account the heat emanated at the rear of the heat source. The program curves were checked by welding 1Kh18N9T (1Kh18N9T) steel pipes (12 x 2; 16 x 1; 16 x 2; 10 x 1.5 mm) on a C-7 (S-7) automatic machine. The results obtained show that programing of

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22012

S/135/61/000/006/001/008
A006/A106

Programing the conditions ...

the conditions for welding small-diameter pipes, produces high-quality joints. The method of approximate rough calculation to determine the necessity of programing conditions for welding seams at their front and rear ends, and also the approximate calculation of the program, yields satisfactory results. An experimental model of a programing device is suggested assuring the stepped change of the output impedance, controlled from a built-in photo-electric transmitter. In programing of current the device is connected to the basic circuit of the controling triodes and in programing of speed, to the electric motor armature circuit. The unit assures programing of welding conditions and reliable operation during welding process.

Figure 1:

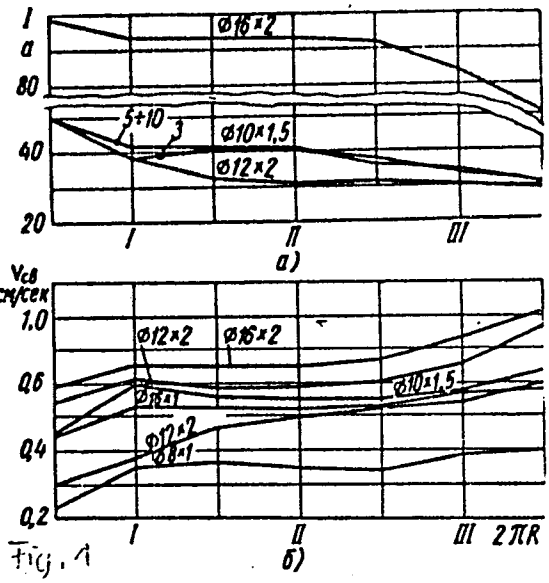



Fig. 1

Figure 1:
Program curves of conditions for welding

Card 3/5

22012
S/135/61/000/006/001/008
A006/A106

Programing the conditions ...

1Kh18N9T steel pipes: a - programing of welding current; b - programing of welding speed.

Figure 6:

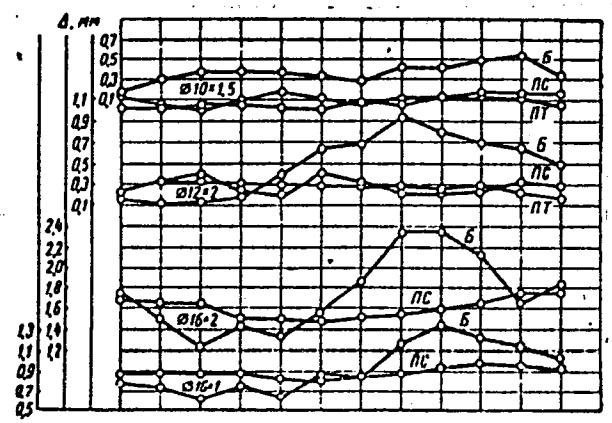



Figure 7:

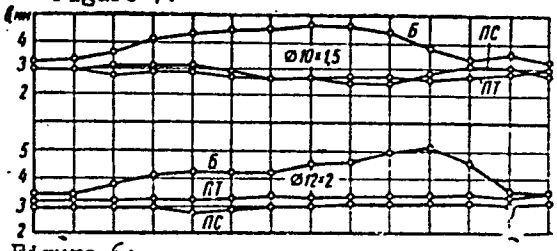



Figure 6:
Changes in the fusion depth (reinforcement inside the pipe) over the seam length. Б (B) - without programed conditions; ПТ (PT) - with programing of current; ПС (PS) - with programing of welding speed.

Figure 7:
Changes in the joint width over its length: B - without programed conditions;

Card 4/5

22012
S/135/61/000/006/001/008
A006/A106

Programing the conditions ...

PT - with programing of current; PS - with programing of speed. There are 2 tables, 8 figures and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc (Wilkinson, B., Milner, D. R., Heat Transfer form Arcs, "British Welding Journal" no. 2, 1960)

Card 5/5

VARLAMOV, I.V., inzh.

New nozzles for gas-arc cutting of metals. Svar. proizv. no.7:34-35 Jl '61. (MIRA 14:6)
(Electric metal cutting—Equipment and supplies)
(Protective atmospheres)

VARLAMOV, I.V., inzh.

Use of shunting generators in gas-arc cutting. Svar. proizv. no.7:30 Jl '63. (MIRA 17:2)

ACCESSION NR: AP4041069 S/0170/64/000/006/0016/0019

AUTHORS: Tikhomirov, V. B.; Varlamov, I. V.

TITLE: A study of arc plasmatron operation

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 6, 1964, 16-19

TOPIC TAGS: plasma temperature, arc plasmatron, energy balance, temperature distribution, radiation loss, ambipolar diffusion, heat conduction

ABSTRACT: An approximate analysis was made to determine the plasma temperature on the axis of an arc plasmatron, using the energy balance

$$EIdl = Ldl + dF,$$

where E - arc voltage, I - current, $l$ - arc length, L - arc energy loss per unit length $l$, and dF - energy absorbed by the gas. To calculate the temperature distribution $T_0$ from the above heat balance, H. Maeker's analysis was used (Z. f. Physik, 157(1), 1, 1959) where it has been assumed that radiation losses and losses due to ambipolar diffusion are negligible. This gives rise to the simultaneous equations

$$\frac{dS_0}{dl} + \frac{15{,}7f}{W'V_0\gamma} S_0 = \frac{I^2}{R^2 g W' V_0 \gamma},$$

1/2

Card

ACCESSION NR: AP4041069

and $$S = \int_0^T x\,dT,$$

where $S_o$ - heat conduction function along channel axis, W - energy content of gas, $V_o$ - gas volume flow, and f - space factor. The simultaneous solution of these two equations leads to an expression for $T_o$ which seems to agree fairly well with experimental measurements (11 000 to 13 000K using spectroscopic techniques) on argon for values of I from 40 to 250 amps and 26.4 $cm^3$/sec flow rates. The calculations also included the determination of i (the current distribution) along the channel length. Orig. art. has: 3 formulas, 3 figures, and 1 table.

ASSOCIATION: none

SUBMITTED: 12Aug63 ENCL: 00

SUB CODE: ME NO REF SOV: 003 OTHER: 011

2/2

Card

ACCESSION NR: AP4040305 S/0057/64/034/006/1027/1030

AUTHOR: Varlamov, I.V.

TITLE: Some results of an investigation of a wall stabilized arc column with an intense axial flow of gas

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.6, 1964, 1027-1030

TOPIC TAGS: plasma, plasma source, plasma stability, electric arc, electric field, electric discharge, argon plasma

ABSTRACT: The electric field in the column of a wall stabilized argon arc was measured in the presence of a strong axial flow of argon. The measurements were undertaken because of the importance of such arcs as plasma sources. The arc current flowed between a tungsten cathode and two copper anodes, one located near the cathode and the other at the far end of the arc chamber (length unspecified). The two anodes were supplied separately and their currents could be varied independently. The wall of the arc chamber was composed of a number of water-cooled copper discs, each of which had a 5 mm diameter central opening through which the discharges passed. These discs were insulated from each other and from the anodes. Argon was

Card 1/3

ACCESSION NR: AP4040305

admitted to the chamber at the cathode end, flowed through an opening in the first anode and the central openings in the copper discs, and left the chamber through an opening in the second anode. The electric field was determined by measuring potential differences between the copper discs. The purpose of the first anode was to preheat the entering gas so that the column would be in equilibrium throughout its subsequent length, and its current was accordingly adjusted until the electric field was equal in the two halves of the column. Under these conditions the column was presumed to be axially isothermal, and the Joule heat presumably escaped through the walls. The temperature was calculated from the resistivity of the plasma with the aid of the relations given by A.Sherman (ARS J.30,559-560,1960). Second anode currents from 19.5 to 90 A and argon fluxes from 0.386 to 1.82 $m^3$/hour were employed. The electric fields ranged from 6.6 to 14.6 V/cm and the temperatures from 7600 to 11 900°K. For fixed gas flow, the electric field and the temperature increased with increasing arc current. For fixed arc current, the electric field increased and the temperature decreased with increasing gas flow rate. Orig.art.has: 2 figures and 1 table.

Card 2/3

ACCESSION NR: AP4040305

ASSOCIATION: none

SUBMITTED: 20May63

SUB CODE: ME

NR REF SOV: 001

ENCL: 00

OTHER: 004

Card 3/3

VARLAMOV, I.V., kand. tekhn. nauk

Reasons for the instability of a low-ampere arc with a constant current. Svar. proizv. no.2:17-18 F '65.

(MIRA 18:3)

VARLAMOV, L.I.; BARANOV, A.G., inzh., retsenzent; PALEYEV, N.M., inzh., red. izd-va; TIKHANOV, [illegible]Ya., tekhn. red.

[Testing stations for piston and gas-turbine engines] Ispytatel'nye stantsii porshnevykh i gazoturbinnykh dvigatelei. Moskva, Mashgiz, 1963. 171 p. (MIRA 16:7)
(Internal combustion engines--Testing)
(Engineering laboratories)

VARLAMOV, M. A. i USHKALOV, F. I.

20009 VARLAMOV, M. A. i USHKALOV, F. I. Agrokompleks vbsokogo urozhaya khlopchatnika i ego ekonomicheskiya effektivnost'. Sel. Khoz-vo tadzhikistana, 1949, No. 3, s. 21-27.

SO: LETOPIS ZHURNAL STATEY, Vol. 27, Moskva, 1949.

VARLAMOV, M. A.

"The Fight Against Pests and Diseases of Alfalfa in Irrigated Regions", Agricultural Engineering of Alfalfa on Irrigated Soils, Tashkent, pp 91-108, 1950.

VARLAMOV, M. A.

VARLAMOV, M. A. "Pests and Diseases of Alfalfa and Measures for Their Control in Middle Asia," in Grass Sowing and Seed Production of Perennial Grasses, State Publishers of Agricultural Literature, Moscow, 1950, pp. 605-609. 60.19 Un32

SO: SIRA SI-90-53, 15 Dec. 1953

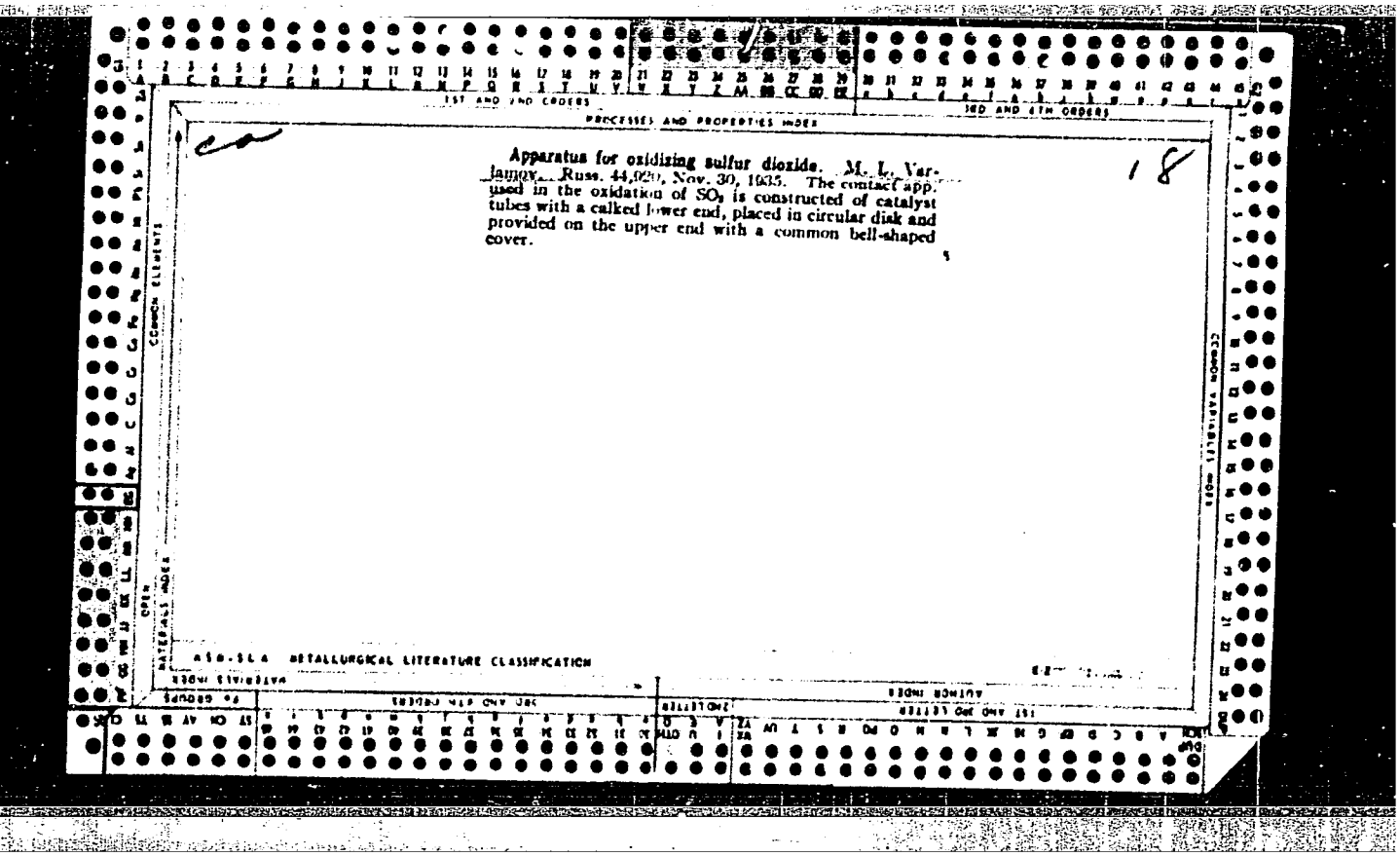
VARLAMOV, M.I., inzh.

Manufacture of wood fiber boards in Poland. Der.prom. 11 no.4:27-29 Ap '62. (MIRA 15:4)

1. Proyektnyy institut No.2 Ministerstva stroitel'stva RSFSR.
(Poland--Hardboard)

VARLAMOV, M.I.

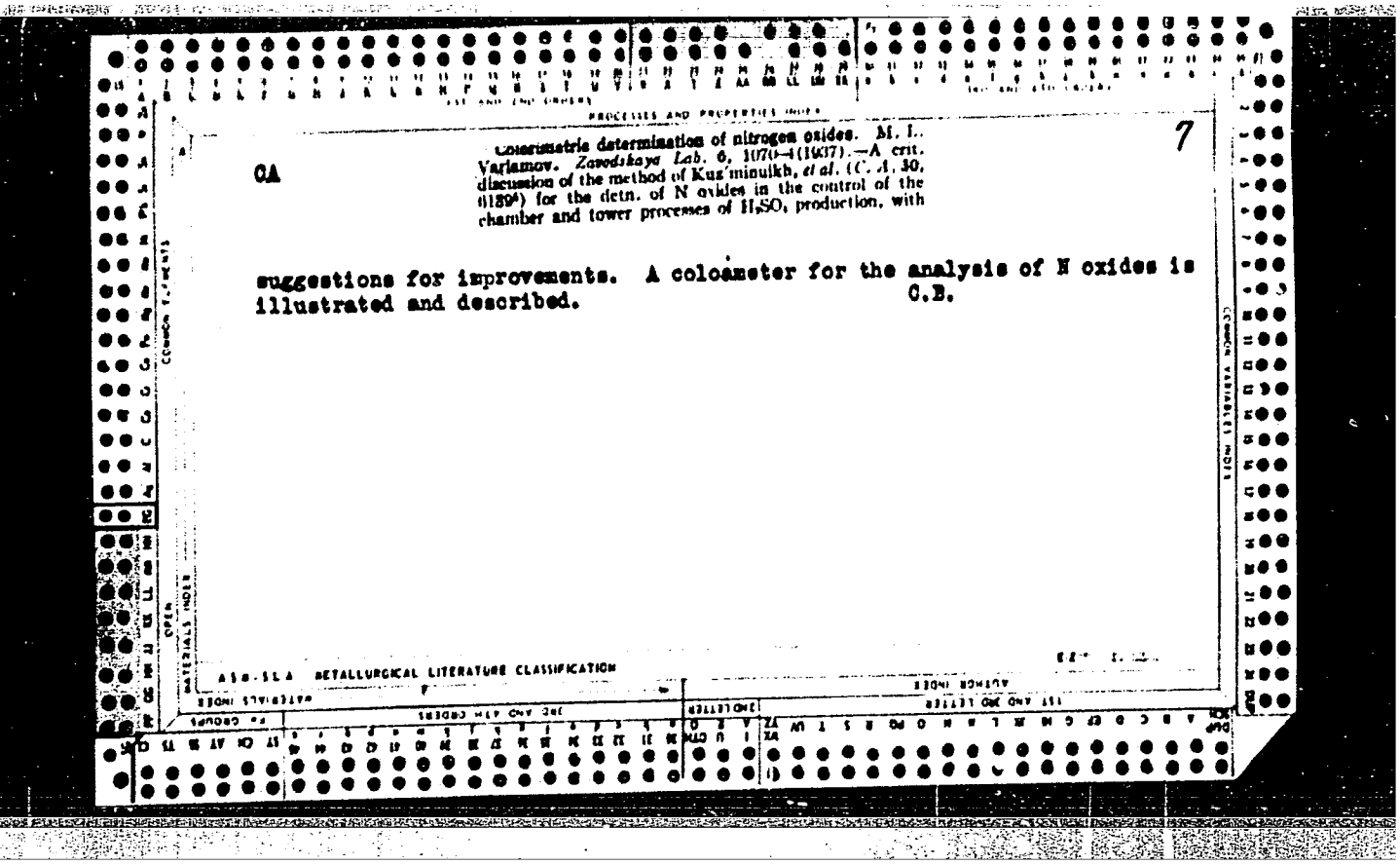
Introduce the dry method in the production of hard fiberboard.
Der. prom. 13 no.1:6-8 Ja '64. (MIRA 17:4)



PROCESSES AND PROPERTIES INDEX

Apparatus for oxidizing sulfur dioxide. M. L. Varlamov. Russ. 44,020, Nov. 30, 1935. The contact app. used in the oxidation of $SO_2$ is constructed of catalyst tubes with a calked lower end, placed in circular disk and provided on the upper end with a common bell-shaped cover.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

7

Colorimetric determination of nitrogen oxides. M. I. Yariamov. *Zavodskaya Lab.* 6, 1070–4 (1937).—A crit. discussion of the method of Kuz'minukh, *et al.* (*C. A.* 30, 6189[4]) for the detn. of N oxides in the control of the chamber and tower processes of $H_2SO_4$ production, with suggestions for improvements. A colorimeter for the analysis of N oxides is illustrated and described.

C.B.

VARLAMOV, M. L.

30162

K voprosu ob upruaosti okislov azota nad nitrozami (po povody stat' k
m. e. pozina n.m. flyeinskoy "ob uprugosti okislov azota nai hltrozami"
v " zhurnalye prikl. khimii", 1948, No. 7).
Zhurnal prikl. khimii, 1949, No. 9, C. 938-42.--Bibliogr: 6 nazv.

SO: LETOPIS' NO. 34

VARLAMOV, N. L.

37213. TOPATIO, E. K. i VARLAMOV, N. L. K voprosu o skorosti gidroliza nitroz- i desorbtsii okislov azota, Trudy odes. Gos. un-ta im. Mechnikova, T. V, 19..9, s. 97-127.

SO: Letopis' Zhurnal'nykh Statey, Vol. 7, 1949

C A

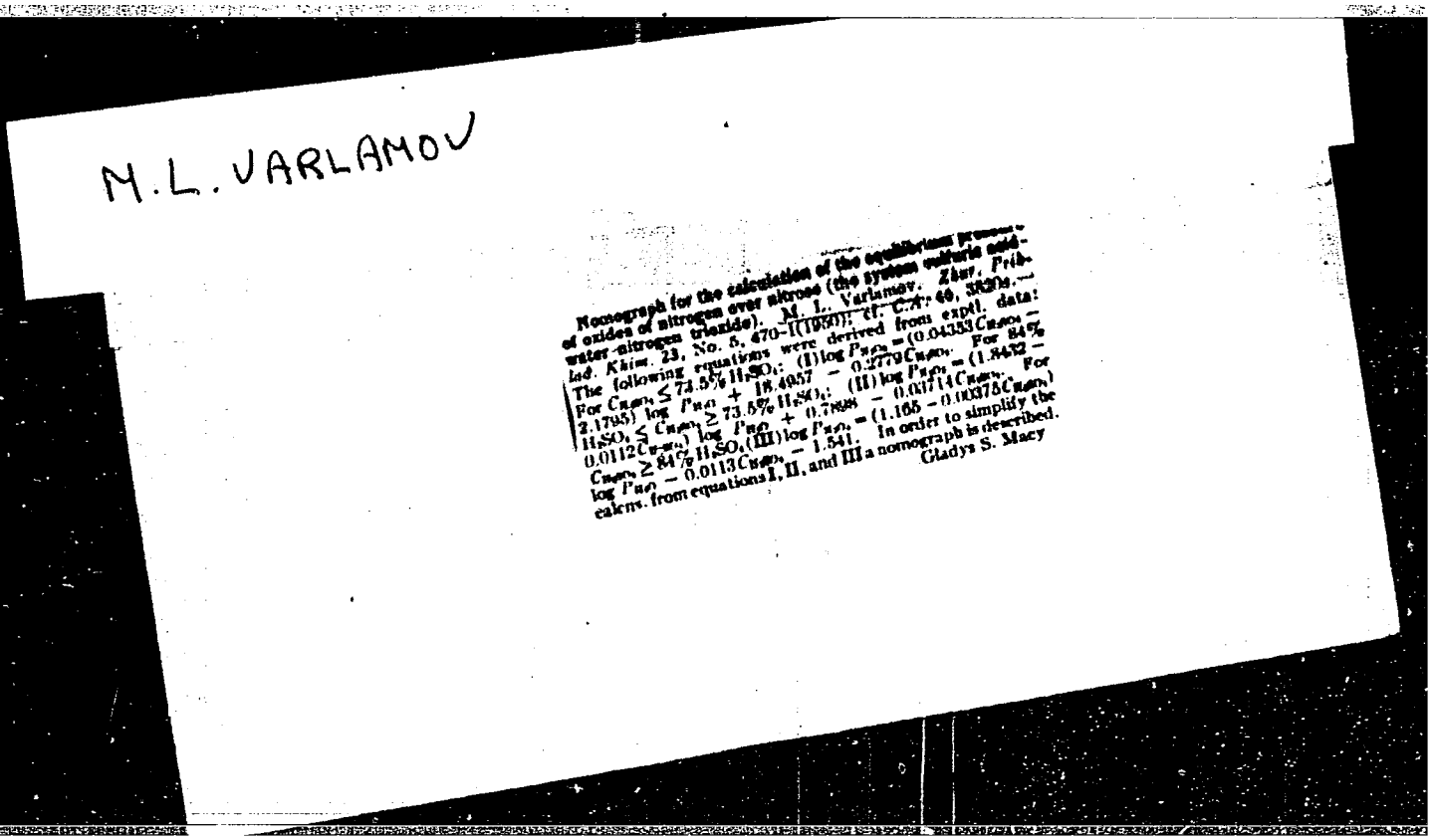
**Vapor pressure of nitrogen oxides over nitroses.** M. I. Varbanov. *Zhur. Prikład. Khim.* (J. Applied Chem.) 22, 938-42(1949).—The detns. of Pozin and Flerinskaya (*C.A.* 43, 9176) are inadequate on account of the limited no. of measurements, absence of compns. of the final mixts., and other shortcomings. N. Thon

2

CA

**Equilibrium pressure of nitrogen oxides over nitroses.** (The system $H_2SO_4$-$H_2O$-$N_2O_3$.) M. I. Vatlamov. *Zhur. Prikład. Khim.* (J. Applied Chem.) 23, 127-35 (1950).—On the basis of an analysis of literature data of the pressure $P$ of $N_2O_3$ over $H_2SO_4$ + $H_2O$ + $N_2O_3$ as a function of the concn. $c$ of $H_2SO_4$ (in %), the following empirical formulas are derived for the exponent $A$ in $P = H = 10^A$ ($H$ = Henry coeff.): in the range $c \leq 73.5\%$, $A = [(0.04353\ c - 2.1795) \log P_w] + 18.4857 - 0.2779\ c$; in the range $73.5 < c < 84\%$, $A = [(2.2275 - 0.1642\ c) \log P_w] + 1.885 - 0.052c$; in the range $c > 84\%$, $A = [(1.165 - 0.0037c) \log P_w] - 0.0113c - 1.541$. These formulas include the temp. dependence of $P$, as $P_w$ is the satn. vapor pressure of $H_2O$ at the given temp. These formulas refer to $P$ of undissocd. $N_2O_3$ at a 1% $N_2O_3$ content of the nitrose; for other $N_2O_3$ contents, $P$ is obtained by multiplying the value given by the formulas by the actual $N_2O_3$ content of the nitrose, in %. The formulas hold for $c$ from 65 to 92%, temps. from 35 to 150°, and $N_2O_3$ contents up to 7–9%.

N. Thon



M.L. VARLAMOV

Nomograph for the calculation of the equilibrium pressure of oxides of nitrogen over nitrose (the system sulfuric acid-water-nitrogen trioxide). M. L. Varlamov. *Zhur. Prikl. Khim.* 23, No. 5, 470–1 (1950); cf. *C.A.* 40, 3820g.—The following equations were derived from exptl. data: For $C_{H_2SO_4} \leq 73.5\%$ $H_2SO_4$: (I) $\log P_{NO} = (0.04333 C_{H_2SO_4} - 2.1795) \log P_{NO} + 18.4057 - 0.2779 C_{H_2SO_4}$. For 84% $H_2SO_4 \leq C_{H_2SO_4} \geq 73.5\%$ $H_2SO_4$: (II) $\log P_{NO} = (1.8432 - 0.0112 C_{H_2SO_4}) \log P_{NO} + 0.7888 - 0.01714 C_{H_2SO_4}$. For $C_{H_2SO_4} \geq 84\%$ $H_2SO_4$ (III) $\log P_{NO} = (1.165 - 0.0113 C_{H_2SO_4}) \log P_{NO} - 0.0113 C_{H_2SO_4} - 1.541$. In order to simplify the calcns. from equations I, II, and III a nomograph is described.
Gladys S. Macy

BH

AI-4

**Grapho-analytical expression (graphical representation) of density of nitration mixtures.** M. L. Variamov (*J. appl. Chem. USSR*, 1950, **23**, 816–822).—The divergent data of Stupnikov (*J. appl. Chem. USSR*, 1944) and of Kuz'minykh (*J. chem. Ind. USSR*, 1944) are critically reviewed. The author's own measurements for nitration with 1% $N_2O_3$ and 75, 80, 85, 87, and 90% $H_2SO_4$ agree with those of Kuz'minykh which are to be regarded as more reliable.

The increases of sp. gr. of the above nitration mixtures due to the absorption of 1% $N_2O_3$ by $H_2SO_4$ of the above concn. are 0·0092, 0·0088, 0·011, 0·011, and 0·0088, respectively. A ternary composition diagram ($H_2SO_4$–$N_2O_3$–$H_2O$) with curves of equal $d$ is presented. The additional diagram of sp. gr. varying from 1·56 to 1·84 as a function of $[H_2SO_4]$ at 10, 15, 20, 25, 30, 40, 50, 60, 80, and 100° shows the corresponding temp. corrections with $[H_2SO_4]$ varying from 75 to 97%. A similar diagram is given for more exact readings for nitration mixtures of high $[H_2SO_4]$ (97–99%). The nomogram is valid for $[N_2O_3]$ varying from 0 to 10%. The nomogram facilitates rapid readings of composition (or the initial $H_2SO_4$% before the absorption of $N_2O_3$), sp. gr., or temp. when two of these variables are known.

J. B. J. ZABA.

CA

2

**Nomographic representation of the density of nitroses.** M. I. Varlamov. *J. Applied Chem. U.S.S.R.* 23, 863-71 (1950)(Engl. translation); *cf. C.A.* 44, 8755h.—The literature data for the sp. gr. of nitroses are marked by considerable variations, especially with 75–90% $H_2SO_4$. The results of supplementary detns. of the d. of nitroses agree substantially with the data of Kuzminykh & Andreeva (*C.A.* 40, 2274⁶). A diagram was constructed showing values for $H_2SO_4$, $H_2O$, and $N_2O_4$, for calcg. the compn. and d. of nitroses. Apparent mol. vols., soln. contraction, and temp. are considered.

Ned E. Jaffa

VARLAMOV, M. L.

PA 190T34

USSR/Chemistry - Sulfuric Acid Production Oct 51

"The Heat of Evaporation of Nitrogen Oxides From Nitroses," M. L. Varlamov

"Zhur Prik Khim" Vol XXIV, No 10, pp 1010-1018

Gives math expression for differential heats of vapor formation of N oxides from nitrose $L_{N_2O_3} = f(C_{H_2SO_4}, T)$ for $H_2SO_4$, $H_2O$, $N_2O_3$ system and calculates some values using it. Establishes variations of $L_{N_2O_3}$ with temp, $H_2SO_4$ concn, and deg of nitrification. Carries out similar calcns for $H_2SO_4$, $H_2O$, $N_2O_3$, $HNO_3$ system and compares data obtained for both systems.

190T34

USSR/Chemistry - Sulfuric Acid Production Jan 52

"Concerning the Theory of the Process in the Absorption Zone of Nitrose-Sulfuric Acid Systems," M. L. Varlamov

"Zhur Prik Khim" Vol XXV (25), No 1, pp 3-12

Considers some relationships governing the process which occurs in the absorption zone of nitrose-sulfuric acid systems with the ultimate aim of evaluating results of the operation of such absorption zones in individual installations on the basis of published investigations and measurements. Appends extensive Russian bibliography dealing with older

206T36

USSR/Chemistry - Sulfuric Acid Production Jan 52
(Contd)

work on the subject published in "Khimstroy" and "Zhur Khim Prom." Refers to own paper published in "Zhur Khim Prom" No 5, 1950.

206T36

VARLAMOV, M. L.

VARLA-O', . L.

(1) 2

**Viscosity of sulphuric acid and of its aqueous solutions.** M. L. Varlamov (*J. appl. Chem., USSR*, 1952, **25**, 553—556).—Literature data on the $\eta$ of $H_2SO_4$ at various concn. and temp. have been replotted as $\log \eta$ against $\log \eta_0$, where $\eta_0$ is the $\eta$ of water. The results are treated theoretically. The existence of the hydrates $SO_3,5H_2O$ and $SO_3,2H_2O$ is deduced. A nomogram for the $\eta$ of $H_2SO_4$ at concn. of 6—100% at 0—100° is included.

R. C. MURRAY.

11-9-54
mlc

VARLAMOV, M. L.

"Physicochemical Principles of Individual Stages in the Nitrosylsulfuric Acid Process and Some New Technological Flow Sheets." Dr Tech Sci, Moscow Chemocotechnological Inst, Odessa, 1954. (RZhKhim, No 22, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No. 521, 2 Jun 55

VARLAMOV, M.L. VARLAMOV, M. L. FD 182

USSR/Chemistry - Nitrosylsulfuric Acid

Card 1/1

Author : Varlamov, M. L., and Starosel'skiy, Ya. I.

Title : A method of preparing crystalline nitrosylsulfuric acid

Periodical : Khim. prom. 3, 57-58 (185-186), April-May 1954

Abstract : Describe a method for the preparation of crystalline nitrosylsulfuric acid from sodium nitrite and sulfuric acid. The crystals prepared by this method are used for the preparation of nitroses having a definite content of nitrogen trioxide and of sulfuric acid and not containing any free nitric acid. Illustrated by 1 figure. No references

Institution : Chair of the Technology of Inorganic Substances, Odessa Polytechnic Institute

VARLAMOV, M. L.

AID - P-87

Subject : USSR/Chemistry

Card : 1/1

Authors : Varlamov, M. L.

Title : Oxidation of sulfur dioxide on a vanadium catalyst, maintained in suspension

Periodical : Zhur. Prikl. Khim. 27, no. 4, 360-367, 1954

Abstract : With decrease in the size of particles of vanadium catalysts from 3 to 0.25 mm., i.e. 12 times, the reaction rate constant increases 6 to 6.5 times. With decrease of the particle size to 0.08 mm., 37 times, the reaction rate constant increases 11 to 12 times. Seven references (six U.S.S.R.): 1934-1952. Three tables; one graph.

Institution : None

Submitted : December 3, 1952

VARLAMOV M.L.

B-8

USSR/Thermodynamics - Thermochemistry. Equilibria.
Physical-Chemical Analysis. Phase Transitions.

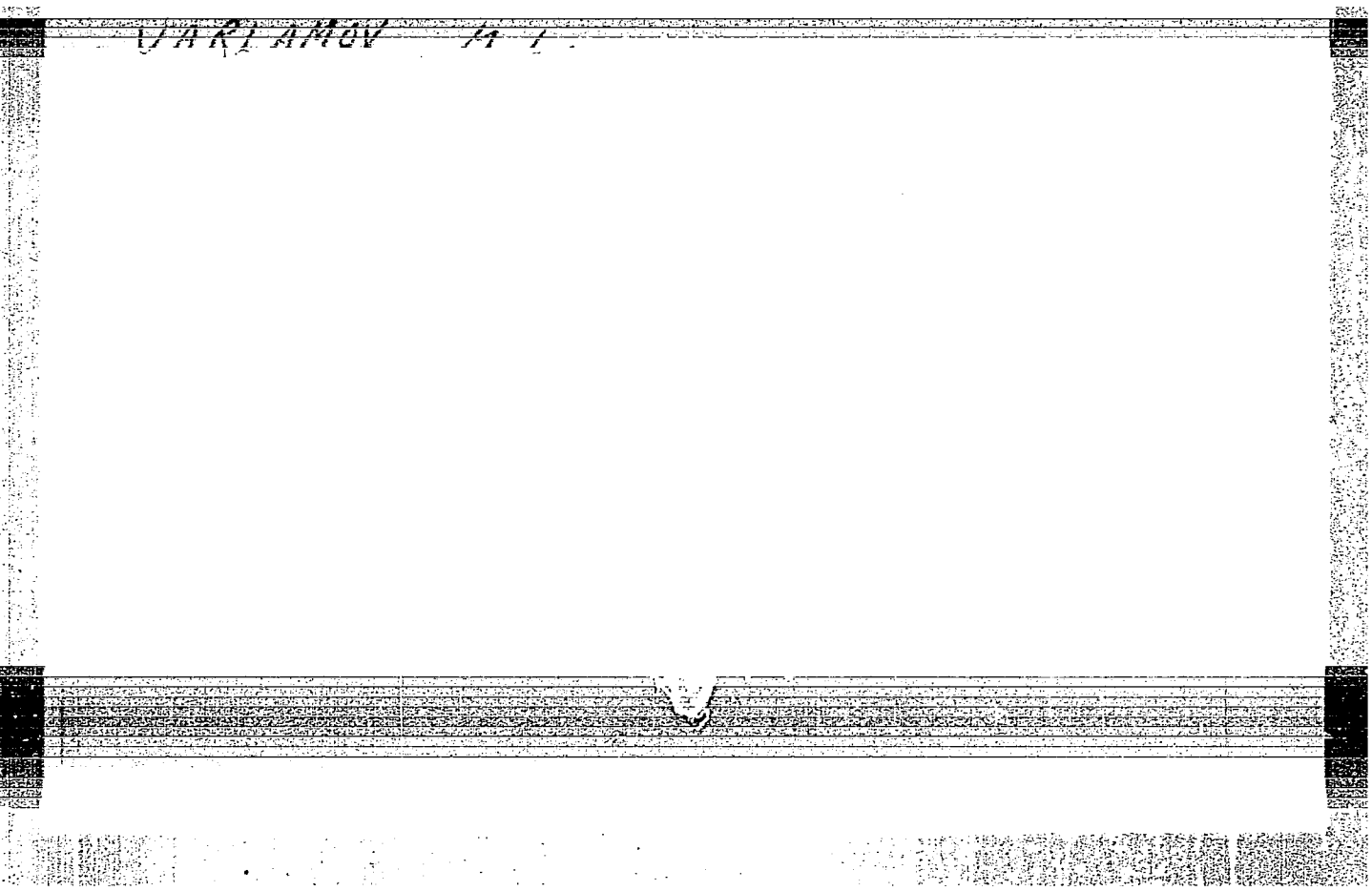
Abs Jour : Referat Zhur - Khimiya, No 6, 1957, 18489

Author : M.L. Varlamov.
Inst : Odessa Polytechnical Institute.
Title : Methods of Comparative Computation of Experimental Data According to Separate Physico-Chemical Properties of Systems Under Study.

Orig Pub : Nauch. zap. Odessk. politekhn. in-ta, 1955, 2, No 1, 59-66

Abstract : A brief review of some methods of the comparative computation of properties of substances is presented. These properties correspond to a linear equation of the form $\log G'' = A \log G' + B$, where G' and G'' are either a property of two substances, or two properties of the same substance (vapor pressure on the liquid, composition of vapor over solutions, solubility of a gas in a liquid, constants of the phase and chemical equilibrium, constants of the

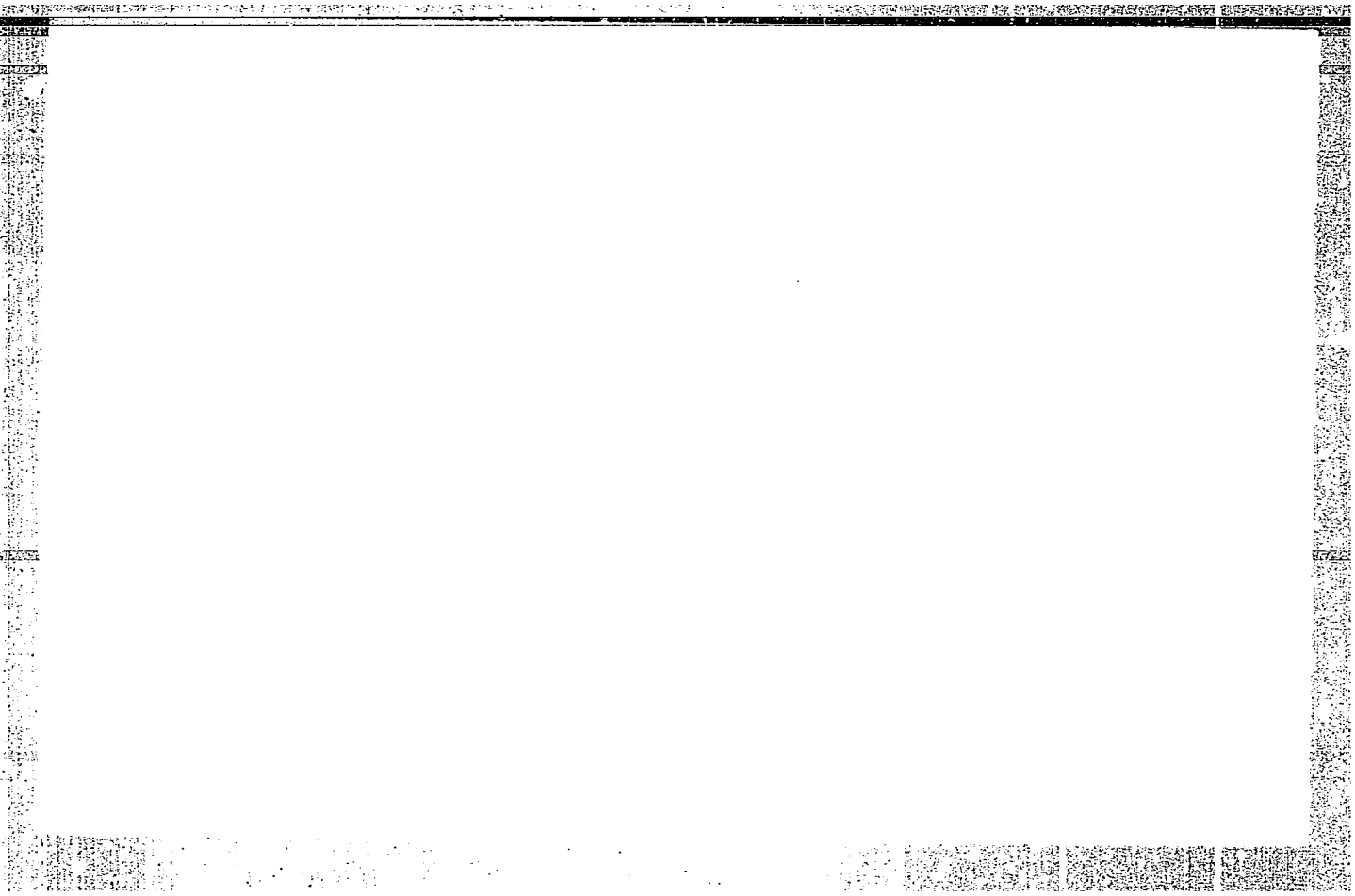
Card 1/2



VARLAMOV, M.L.; KRICHEVSKAYA, Ye.L.

Effect of temperature, transference rate for nitrogen oxides, and of the increased strength of sulfuric acid on the rate of acid formation. Zhur.prikl.khim. 29 no.5:675-682 My '56.
(MLRA 9:8)

1. Odesskiy politekhnicheskiy institut.
(Nitrogen oxides) (Sulfuric acid)



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001858620013-7"

Name: VARLAMOV, Mikhail Lukich

Dissertation: Physico-Chem basis of the various stages of the nitrous sulphuric acid process and several new technological schemes

Degree: Doc Tech Sci

Affiliation: Odessa Polytechnic Inst

Defense Date, Place: 18 May 55, Council of the Moscow Order of Lenin Chemico-Engineering Inst imeni Mendeleyev

Certification Date: 4 May 57

Source: BMVO 15/57

VARLAMOV, M.L.; MANAKIN, G.A.; STAROSEL'SKIY, Ya.I.

Purification of tower process in sulfuric acid fumes in apparatus of the type of flow measuring pipes. Zhur. prikl. khim. 31 no.2:178-186 F '58. (MIRA 11:5)

1. Odesskiy politekhnicheskiy institut.
(Sulfuric acid) (Packed towers)

VARLAMOV, M.L.; KRICHEVSKAYA, Ye.L.

Expressing the concentration of sulfuric acid in nitrose. Izv. vys.ucheb.zav.; khim.i khem.tekh. 2 no.6:904-908 '59.
(MIRA 13:4)

1. Odesskiy politekhnicheskiy institut. Kafedra tekhnologii i avtomatizatsii khimicheskikh proizvodstv.
(Nitrosylsulfuric acid)
(Sulfuric acid)

S/194/62/000/004/065/105
D295/D308

AUTHORS: Varlamov, M. L., Krichevskaya, Ye. L., Manakin, G. A., Znan, A. A., Kozakova, L. M. and Zbrozhek, L. S.

TITLE: Investigation of the acoustical coagulation of aerosols formed in chemical factories

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 4, 1962, abstract 4-5-38g (V sb. Primeneniye ul'traakust. k issled. veshchestva. no. 12, M., 1960, 199-204)

TEXT: The coagulation of mists of sulphuric acid, of solutions of ammonium nitrate and nitride, of silicon-fluorhydric acid and coal-dust was investigated. Mists were precipitated in horizontal tubes of 45 mm diameter and 500 - 950 mm length, and dusts in vertical tubes. ГС-2 (GS-2) generators, with a separating membrane of thin rubber, were used for sound-irradiating the gas. Coagulation monitoring was carried out by chemical and nephelometric control methods, as well as by determining the numerical concentration of

Card 1/2

Investigation of the ... S/194/62/000/004/065/105
D295/D308

particles by means of the УМФ-3 (UMF-3) ultramicroscope. The concentration of $H_2SO_4$ mist amounted to 0.3 - 10.6 g/cm$^3$; at an [irradiation] level of 153 - 155 dB for the duration of 4 - 5 sec the degree of coagulation reaches 97 - 99%. The best results were obtained at frequencies of 16 and 22 kc/s. Data were presented on coagulation of mists containing fluorine compounds. [Abstracter's note: Complete translation.]

Card 2/2

S/058/62/000/003/055/092
A061/A101

24,1600

AUTHORS: Varlamov, M. L., Manakin, G. A., Krichevskaya, Ye. L., Gospodinov, A. N.

TITLE: A study of the acoustic field of a gas-flow sound generator of the Hartmann type

PERIODICAL: Referativnyy zhurnal, Fizika, no. 3, 1962, 38, abstract 3G304 (Sb. "Primeneniye ul'traakust. k issled. veshchestva", no. 12, Moscow, 1960, 205-213)

TEXT: A gas-flow sound generator ГС -2 (GS-2) (of the Hartmann type) was worked out to study the acoustic coagulation process in aerosols. The acoustic field obtained with the GS-2 generator was examined and so was the effect of the tuning parameters (distance between nozzle and resonator, depth of resonator) on the intensity and frequency of sound in the free field with different diameters of both nozzle and resonator. The acoustic field was found to be remarkably inhomogeneous. Diagrams of sound directivity in the horizontal and vertical planes were plotted. Using a reflector, it was possible to obtain a directed acoustic energy beam of an intensity up to 5 w/cm$^2$ or 167 db. The sound

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A study of the acoustic field ... S/058/62/000/003/055/092
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intensity considerably depends on the frequency which was chiefly determined by the resonator depth. A series of optimum frequencies was found, where intensity passed through maxima. The distance between nozzle and resonator, their diameters, the reflector position, and the pressure of compressed air blown through the generator are of no significant influence upon the optimum frequencies. Frequency and intensity of sound depend not only on the design parameters of the generator and on its size, but also on the direction in which these parameters have changed. This is related to the phenomenon called the hysteresis of sound. Hysteresis may be observed in a definite region, where all design parameters are changed. There are 16 references.

[Abstracter's note: Complete translation]

Card 2/2

AUTHORS: Varlamov, M. L., Drobysheva, O. M.

S/153/60/003/01/040/058
B011/B005

TITLE: Investigation of the Absorption Process of Nitrogen Oxides of Low Concentrations by Soda Solutions in an Apparatus of the Venturi Tube Type

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1960, Vol 3, Nr 1, pp 146-150 (USSR)

TEXT: It was the object of this paper to study the influence of various factors on the absorption mentioned in the title. These factors include: the linear velocity of the gas in the tube (Fig 2), the concentration of nitrogen oxides (Fig 4), the degree of their oxidation α, the concentration of the soda solution (Fig 4), and the ratio between gas- and liquid consumption of the apparatus (g : liqu). Figure 1 shows a diagram of the experimental plant. The volume coefficients of the absorption rate were computed from the analytical data by formula (1), and the results were converted for elementary nitrogen. The authors discuss all mentioned factors separately, and compare the data obtained with those obtained by other apparatus. On the basis of this comparison, the authors arrive at the conclusion that the Venturi tube type apparatus are among the most efficient ones. There are 4 figures and 19 references, 15 of which are Soviet.

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Investigation of the Absorption Process of Nitrogen Oxides of Low Concentrations by Soda Solutions in an Apparatus of the Venturi Tube Type

S/153/60/003/01/040/058
B011/B005

ASSOCIATION: Odesskiy politekhnicheskiy institut; Kafedra tekhnologii i avtomatizatsii khimicheskikh proizvodstv (Odessa Polytechnic Institute; Chair of Technology and Automation of Chemical Production)

SUBMITTED: January 6, 1959

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SOV/80-33-1-3/49

AUTHORS: Varlamov, M. L., Krichevskaya, Ye. L., Manakin, G. A., Kozakova, L. M., Gospodinov, A. N.

TITLE: Acoustic Coagulation of Sulfuric Acid Fog

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 1, pp 14-20 (USSR)

ABSTRACT: Acoustic coagulation of sulfuric acid vapors (which is an effective method for purification of air from finely dispersed ($10^{-1}$-$10^{-2}$ ) aerosols) was studied using the installation shown in Fig. 1 (which also includes devices for generation of the fog).

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Fig. 1. Diagram of installation for generation of sulfuric acid fog and for study of acoustic coagulation of the fog. (1) Gas cylinder; (2) gas scrubbers; (3) rheometers; (4) mixer ($SO_2$ + air); (5) contact oven; (6) thermocouple; (7) electronic thermoregulator; (8) recording galvanometer; (9) humidifier; (10) compressor; (11) gas jet sound generator; (12) coagulation pipe; (13) photonephelometer; (14) ultrathermostat; (15) absorption tubes; (16) aspirator.

Acoustic Coagulation of Sulfuric Acid Fog

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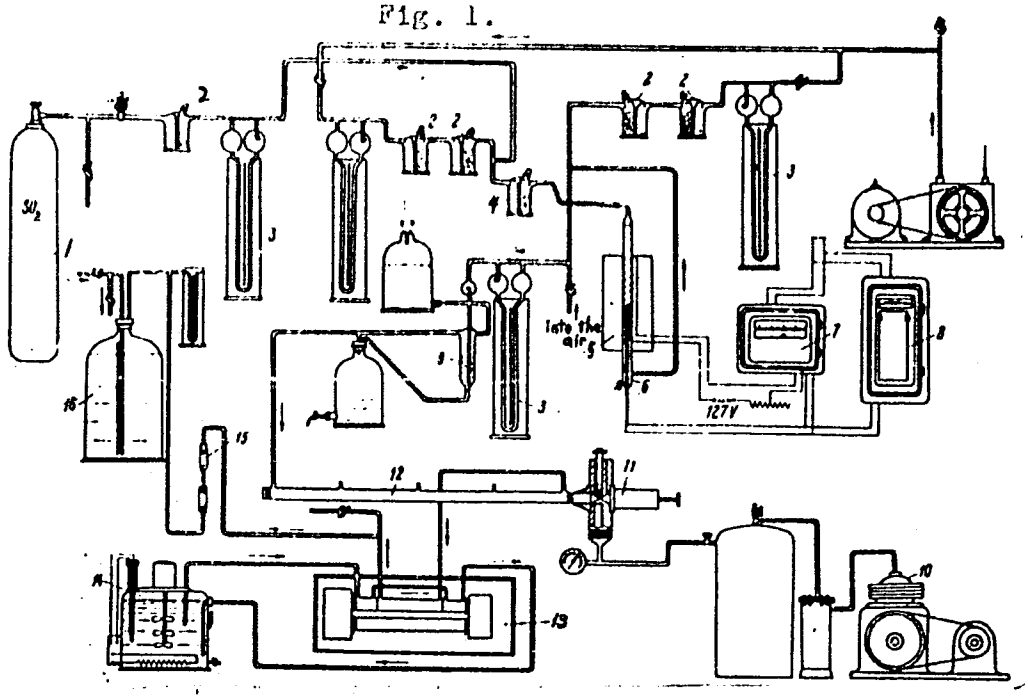
Fig. 1.

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Acoustic Coagulation of Sulfuric Acid Fog

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Vapors of sulfuric acid were obtained by mixing water vapor with sulfuric anhydride (obtained by oxidation of $SO_2$ with air in the contact oven (5)) in the humidifier (9). The gas jet generator GS-2 (11)--the modified Hartmann (Gartman) whistle (constructed in Odessa Polytechnical Institute with participation of N. A. Ivanov)--was used for inducing coagulation in the glass tube (12) 45 mm diam, length 500 mm). Sound frequency was measured with an EO-7 oscillograph and ICh-6 frequency meter. The coagulated fog was analyzed by photonephelometer (13). To prevent vapor condensation, the face glasses of the sample tubes of the nephelometer were kept at $55^{\circ}$ by circulating water from the thermostat (14). The nephelometer values were compared with the data of chemical analysis (of $H_2SO_4$). The analysis of acoustic coagulation of $H_2SO_4$ fog has shown that

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there are optimum frequencies for coagulation at each sound intensity; increasing acoustic power displaces this optimum toward the lower frequencies (see Fig 2).

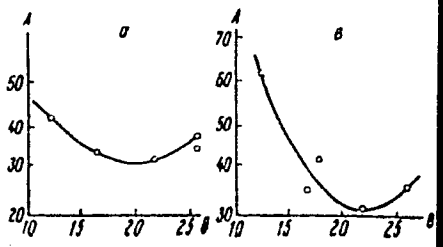


Fig. 2. Final concentration of sulfuric acid fog as function of sound frequency at varying acoustic power of the generator. (A) Photonephelometer readings (in scale divisions); (B) frequency (in kcycles). Generator power (in watts): (a) 5; (b) 2.5.

Fig. 3 shows variation in degree of fog coagulation with change in acoustic power at constant frequency.

Acoustic Coagulation of Sulfuric Acid Fog

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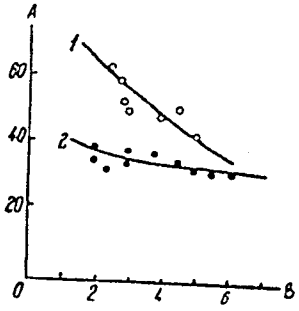


Fig. 3. Final concentration of $H_2SO_4$ fog as function of acoustic power. (A) Readings of photonephelometer (in scale divisions); (B) acoustic power (in watts). Frequency (in Kcycles) (1) 12.1; (2) 21.6.

It can be seen that coagulation increases with increasing sound intensity, but the higher frequencies make this effect less pronounced. Effect of initial concentration of $H_2SO_4$ fog upon coagulation is shown in Fig. 4 (time of sounding 4.7 sec; gas flow 5.8 l/min).

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Acoustic Coagulation of Sulfuric Acid Fog

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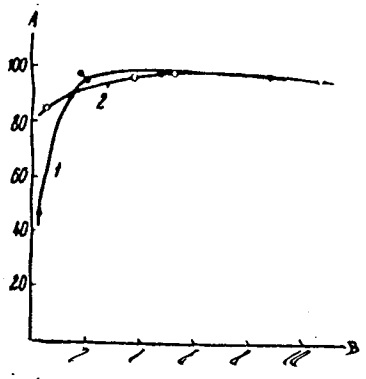


Fig. 4. Degree of coagulation of $H_2SO_4$ fog as function of initial vapor concentration (in g $H_2SO_4/m^3$ at STP). Frequency (in kcycles): (1) 14.6; (2) 25.5.

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Better than 97% coagulation is achieved at 1.7-8.7 $g/m^3$ concentration of $H_2SO_4$. Increase of initial fog concentration above 5 $g/m^3$ leads

to a gradual decrease in coagulation. Plot of coagulation degree vs. the time of sounding resulted in S-shaped curves. By changing the character of sound, it was found that conditions for formation of stationery sound waves are more favorable (time of sounding can be shortened 1.5 times for ~ 100% coagulation). There are 5 figures; 2 tables; and 27 references, 8 Soviet, 3 German, 1 French, 1 Japanese, 4 U.K., 8 U.S., 2 unidentified.* The 5 most recent U.K. and U.S. references are: R. T. Hueter, R. H. Bolt, Sonics Techniques for Use of Sound and Ultrasound in Engineering and Science, N. Y. (1955); Melvin Nord, Chem. Eng., 116 (1950); E. K. Neuman, L. Norton, Chem. Eng. Progr. Symp., 1, 47, 4 (1951); E. Brum, R. M. G. Boucher, J. Acoust. Soc. Am., 29, 5, 573 (1957); H. W. Danser, E. P. Neuman, Ind. Eng. Ch., 41, 2439 (1949).

SUBMITTED: June 13, 1959

* Abstracter's note: The unidentified references are: L. Pimonov, Anan. Telecommun., 6, 1, 23 (1951); 6, 11, 337 (1951); J. Hartmann, The Acoustic Air Jet Generator, Ingeniorvidenskabelige Schrifter, 4 (1939).

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VARLAMOV, M. L.; DROBYSHEVA, O. M.

Mass transfer and chemisorption in an apparatus of the type of the Venturi tube. Zhur. prikl. khim. 33 no.9:2020-2029 S '60. (MIRA 13:10)

(Venturi tubes) (Mass transfer)

35136
S/058/62/000/002/024/053
A058/A101

24,1200 (1147, 1327, 1482)

AUTHORS: Varlamov, M. L., Manakin, G. A., Gospodinov, A. N.

TITLE: Investigation of the enhanced-power acoustic gas-jet generators ГС-5 (GS-5) and ГС-5А (GS-5A)

PERIODICAL: Referativnyy zhurnal, Fizika, no. 2, 1962, 45, abstract 2G348 (V sb. "Primeneniye ul'traakust. k issled. veshchestva", no. 14, Moscow, 1961, 247-259)

TEXT: The sound field of a gas-jet generator of advanced design (nozzle diameter - 9.14 mm; resonator diameter - 9.61 mm) with and without a reflector was investigated, and the existence of optimum frequencies at which the intensity of sound attains a maximum was substantiated. A parabolic reflector increases about 20 times over the intensity of sound along the axis of the generator over a distance of 400 mm as compared with the intensity of sound without the reflector. It was established that under optimum adjustment the GS-5 generator without reflector can yield acoustic power up to 1.62 kw (frequency - 6.65 kc) and with reflector up to 1.19 kw (frequency - 5.9 kc), which exceeds several times over the power as calculated by means of the Hartman formula. There is proposed a

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more precise method for calculating the energy of the compressed air being discharged by the gas-jet generator. The efficiency of the GS-5 gas-jet generator under good adjustment attains 30% with or without the parabolic reflector. For the generator with parabolic reflector the principal directions of sound emission and the powerful flux of the air emerging from the nozzle coincide, which prevents its being used for the acoustic coagulation of aerosols. An improved model of the generator was built and tested (generator GS-5A), in which dilution of the sounding medium with air is prevented. The air stream is directed at a right angle to the direction of the emission and is led off through a special aperture. Testing this generator demonstrated the possibility of generating on its axis intensities up to 23.5 watt/cm$^2$ or 173.7 db. The acoustic power of this generator under good adjustment amounts to 1.02 kw and it has an efficiency of 25%. In the sounding chamber (diameter - 1.4 m; length - 10 m) the mean level of sound along the axis and at its end equals 154.8 db, while at the end of the sounding chamber it amounts to 161.8 db with closed lid and 157 db with open lid.

[Abstracter's note: Complete translation]

VARLAMOV, M.L.; KRICHEVSKAYA, Ye.L.; ENNAN, A.A.; KOZAKOVA, L.M.; MANAKIN, G.A.

Acoustic coagulation of a fog containing fluorine compounds. Zhur. prikl. khim. 34 no.1:78-84 Ja '61. (MIRA 14:1)

1. Kafedra tekhnologii i avtomatizatsii khimicheskikh proizvodstv Odesskogo politekhnicheskogo instituta.
(Ultrasonic coagulation) (Fluorine)